REPORTING ADDRESS

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In 1950, Thailand planted 36,000 hectares of corn. The total yield was 26,000 tons averaging 0.8 ton per hectare. Twenty-four years later, corn was planted on 1,240,000 hectares with a total yield of 2,500,000 tons, averaging 2.2 tons per hectare. Almost 90% of the production was exported, earning 6,000 million baht or approximately 300 million U.S. dollars. The value is surpassed only by rice.

Encouraging as these figures may at first appear, they mask the static, if not declining, trend in recent years of the average yield per hectare. Most significantly, the poor showing has occurred even after the release of superior varieties to the farmers. The three most important factors responsible for this catastrophe are long periods of drought, locust damage, and downy mildew (DM) disease.

Downy mildew is the primary corn disease of Thailand. It is caused predominantly by *Sclerospora sorghi*. It was first reported from three districts of Nakhon Sawan Province in 1968. In 1969 the disease was found in Suphan Buri Province and, in 1970, in several other locations in Suphan Buri Province and in Sukhothai and Nakhon Ratchasima Provinces. Since then the disease has been found in almost all of the corn-growing areas of the country and is still spreading. The areas most affected are Lop Buri, Nakhon Sawan, Phetchabun, Phitsanulok and Nakhon Ratchasima where yield losses up to 100% are not unusual.

The rate of spread and severity of the disease focused the attention of both plant pathologists and plant breeders. It was realized that the most economic and effective way to fight this disease was through the use of resistant hosts. Problems that remained were (a) how resistance was to be recognized, (b) how to assess the levels of resistance, and (c) how to incorporate resistance into existing varieties. It was evident that the first two steps would be performed by plant pathologists while the third step would be up to plant breeders. Accordingly, the project was designed in this manner. Scientists of the two disciplines cooperated nicely and their joint efforts resulted in the recent releases of several new varieties; some of which have received international recognition.

The disease was so destructive that some measures had to be taken to alleviate losses during the period of resistant variety development. One measure chosen was to use alien varieties which performed well in the DM nursery. An example was Bogor Syn. 2 introduced from Indonesia. In 1971 it was released to farmers in the heavily-affected areas after passing through two seasons of selection. This measure helped sustain farmer interest in corn growing.

A major achievement finally came in 1975 when variety Suwan-1 was officially released to the farmers. It combined two major characteristics - high yield and strong resistance to DM. In spite of this accomplishment, we have not stopped working. We would like to maintain or widen the positive margin gained in the fight against DM. Better varieties are being developed in the hope that they will replace Suwan-1 in a few years to come.

I would like to stress especially the advantage of exchanging germplasm, data, and cooperative research between countries with similar problems. It has proved very fruitful to all parties in the past. Some examples can be drawn from our own experience. Bogor Syn. 2 variety turned

out to be a successful stop-gap variety. It allowed us time to develop Suwan-1. Suwan-1, on the other hand, contains a good deal of resistance from the Philippines varieties.

Besides cooperating with plant breeders, plant pathologists also studied other important aspects of the disease. We are especially interested in the primary source of inoculum that is tremendously important in disease outbreak, in the variability of the fungus which will have heavy impact upon resistance of the hosts, and in the taxonomy of the fungus. Despite the large amounts of research invested, much remains to be done. It was long felt by the Rockefeller Foundation that other countries would be facing the same problems. The time might be right for the conference. The objective of this conference is to assemble a group of some 15 scientists who are working intensely to (a) assess present knowledge and research activity, (b) determine where gaps of knowledge exist and (c) plan future research and strategy requisite to Asian and world needs for obtaining disease control.

Most of the invitees are plant pathologists because this is the discipline where most of the critical information is lacking. While there is an abundance of information on a few of the eight individual DM diseases, it is often fragmentary and much new knowledge is needed for an adequate understanding of these diseases and their causal pathogens. Therefore, it is deemed important to assemble the expertise from Asia and certain other broad geographic areas in order to identify these gaps in knowledge, to specify which laboratories are best equipped to provide the information, to determine which activities can be done better or swifter by working cooperatively rather than alone and to set priorities and develop programs to achieve these purposes.